

ARTICLE III. RESIDENTIAL CODE FOR ONE- AND TWO-FAMILY DWELLINGS

Sec. 18-57. Adoption of International Residential Code (2012); amendments.

The *International Residential Code* (2012), promulgated by the International Code Council, is adopted and incorporated in this article by reference as if fully set forth, except as it is amended by the following provisions of this section. Provisions of this article are in addition to the provisions of the *International Residential Code*. The following provisions coinciding with provisions of the *International Residential Code* supersede or delete, when indicated, the corresponding provisions of the *International Residential Code*:

All references within the model codes to any building, electrical, gas, mechanical, plumbing, sewage disposal, elevator, energy conservation, or existing building code shall be construed to be a reference to the respective building, electrical, gas, mechanical, plumbing, sewage disposal, elevator, energy conservation, or existing building code specifically adopted by reference in articles II through XIV of this code.

Chapter 1, Scope and Administration, is deleted. See Article I of this chapter.

For temporary erosion and sediment control requirements see section 3307.2 of Article II of this chapter.

R202 DEFINITIONS -- The following definitions have been revised or added (remainder of Section R202 unamended):

TOWNHOUSE. A single-family dwelling unit, in which each unit extends from foundation to roof and with a yard or public way on at least two sides, constructed:

In a group of three or more attached units; or,

In a group of two attached units where a property line exists between the units on the underlying parcels.

WATER SERVICE PIPE. The pipe from the water main or other source of potable water supply to the first shut-off valve downstream of all of the following (as applicable):

1. the point of entrance into the building; 2. the water meter; or 3. the service backflow prevention device.

Table R301.2 (1)

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD	WIND DESIGN		SEISMIC DESIGN CATEGORY ^f	SUBJECT TO DAMAGE FROM			
	Speed ^d (MPH)	Topographic Effects ^k		Weathering ^a	Frost line depth ^b	Termite ^c	
20 psf	90	No	A	Severe	36"	Moderate To Heavy	

WINTER DESIGN TEMP ^e	ICE BARRIER UNDERLAYMENT REQUIRED ^h	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^j
6°F	No	See Ordinance Chapter 28	1000° F-days	54.2° F

(See 2012 International Residential Code for footnotes.)

Table R302.1(1)
EXTERIOR WALLS

Add or amend the following rows from Table R302.1 as follows (remainder of Table unamended):

EXTERIOR ELEMENT	WALL	MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Projections	Not Allowed	N/A	< 2 feet
	Fire- resistance rated	1 hour on the underside	2 feet
	Not fire- resistance rated	0 hours	5 feet

R302.2 Townhouses, Exception. A common 2-hour wall fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 34 through 43. Penetrations of electrical outlet boxes shall be in accordance with Section 302.4.

R303.4 Mechanical ventilation. Where the air infiltration rate of a dwelling unit is less than 3 air changes per hour when tested with a blower door at a pressure of 0.2 inch w.c. (50 Pa) in

accordance with Section N1102.4.1.2, the dwelling unit shall be provided with whole-house ventilation in accordance with Section M1507.3.

R310.1 Emergency escape and rescue required, Exception 2. Except where sleeping rooms are created, emergency escape and rescue openings need not be increased in existing basements undergoing interior finish renovation.

R313 AUTOMATIC FIRE SPRINKLER SYSTEMS. A builder of a one- or two-family dwelling or townhouse shall offer to any purchaser on or before the time of entering into the purchase contract the option, at the purchaser's cost, to install or equip fire sprinklers in the dwelling or townhouse. The purchaser shall have the right to choose or decline to install a fire sprinkler system. This notification requirement is provided in accordance with, and shall expire in conjunction with, Missouri Statute (RSMO 67.281).

R315.3 (Carbon monoxide alarms in existing dwellings), Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of sheathing, or the addition of a window, porch or deck, are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing or mechanical systems are exempt from the requirements of this section.

R322 Flood-Resistant Construction. See Code of Ordinances, Chapter 28 – Floodplain Management.

R324 Moved Structures. Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

R325 Physical Security

R325.1 Purpose. The purpose of this Section is to establish minimum standards that incorporate physical security to make dwelling units resistant to unlawful entry.

R325.1.1 Scope. This section shall apply to all dwelling unit exterior doors.

Exceptions:

1. Vehicle access doors.
2. Storm or screen doors.

R325.2 Doors. Doors shall comply with Sections R325.2.1 through R325.2.3.

R325.2.1 Wood doors. Wood doors shall be of solid core construction such as high-density particleboard, solid wood, or wood block core with a minimum nominal thickness of one and three-fourths inches (1 3/4") at any point.

Exception: Solid wood panels shall be a minimum of one inch (1") thick. The tapered portion of the panel that inserts into the groove of the door shall be a minimum of one-quarter inch ($\frac{1}{4}$ ") thick. The groove shall be a dado groove or applied molding construction. The groove shall be a minimum of one-half inch ($\frac{1}{2}$ ") in depth.

R325.2.2 Steel doors. Steel doors shall be a minimum nominal thickness of one and three-fourths inches ($1\frac{3}{4}$ ") and shall have a minimal skin thickness of 24 gauge.

R325.2.3 Fiberglass doors. Fiberglass doors shall be a minimum nominal thickness of one and three fourths inches ($1\frac{3}{4}$ ") and shall have a minimum skin thickness of one-sixteenth inch ($1/16$ ").

R325.3 Door frames. Door frames shall comply with Sections R326.3.1 through R326.3.4 and shall be installed in accordance with the manufacturer's installation instructions. Door frames shall be installed prior to rough-in inspection.

R325.3.1 Wall framing at door openings. Door frames shall be set in openings constructed with double studs on each side. Doors with sidelights shall have double stud construction on each side of the door and on each side of the sidelight(s). Horizontal blocking shall be placed between studs at the door lock height for three (3) stud spaces on each side of the door opening.

Exception: Installations provided with alternative reinforcing methods as approved by the building official where it is determined that such alternative methods are at least the equivalent of that prescribed with respect to strength and safety.

R325.3.2 Wood frames. Door jambs shall be a minimum nominal thickness of three fourths inches ($\frac{3}{4}$ ") and shall be installed with solid backing in a manner so no void exists between the strike side of the jamb and the frame opening for a vertical distance of twelve inches (12") each side of the strike. Filler material shall consist of solid wood blocking.

Exception: Installations provided with alternative reinforcing methods as approved by the building official where it is determined that such alternative methods are at least the equivalent of that prescribed with respect to strength and safety.

R325.3.3 Steel frames. Steel door frames shall be constructed of 18 gauge or heavier steel with reinforcement at the hinges and strikes. Steel frames shall be anchored to the wall in accordance with manufacturer specifications.

R325.3.4 Sliding doors. Sliding door assemblies shall be installed to prevent the removal of the panels and the glazing from the exterior. Shims or screws shall be installed in the upper track of doors that slide on the bottom track or doors shall be provided with equivalent protection as approved by the building official..

R325.4 Door hardware. Door hardware shall comply with Sections R326.4.1 through R326.4.7.

R325.4.1 Hinges. Hinges for swinging doors shall comply with the following:

- A. A minimum of three (3) four inch (4") hinges shall be installed on each swinging door.
- B. Each hinge shall be attached to the frame with at least two (2) screws, not less than three inches (3") in length and penetrating at least one inch (1") into the nearest stud. Solid wood fillers or shims shall be used to eliminate any space between the wall structure and door frame behind each hinge.

Exception: Installations provided with alternative reinforcing methods as approved by the building official where it is determined that such alternative methods are at least the equivalent of that prescribed with respect to strength and safety.

- C. Hinges for out-swinging doors shall be equipped with mechanical interlock to preclude the removal of the door from the exterior.

R325.4.2 Locks. Swinging doors shall be provided with a single-cylinder deadbolt locking device (keyed on exterior only) with a minimum projection of one inch (1"). The deadbolt shall penetrate at least three-fourths inch (3/4") into the strike receiving the projected bolt. The cylinder shall have a twist-resistant, tapered hardened steel cylinder guard. The cylinder shall have a minimum of five (5) pin tumblers, shall be connected to the inner portion of the lock by solid metal connecting screws at least one-fourth inch (1/4") in diameter and two and one-fourth inches (2-1/4") in length. The bolt assembly (bolt housing) unit shall be of single piece construction. All deadbolts shall meet ANSI grade 2 specifications.

Exception: Doors with integral multi-point locking devices.

R325.4.3 Strike plates. The deadbolt strike plate shall be a minimum of 18 gauge metal with four offset screw holes. The strike plate shall be attached to the door jamb with four screws not less than three inches (3") in length, and penetrating at least one inch (1") into the nearest stud.

Exception: Installations provided with alternative reinforcing methods as approved by the building official where it is determined that such alternative methods are at least the equivalent of that prescribed with respect to strength and safety.

R325.4.4 Door edge protector. A metal L-shaped or U-shaped door edge protector shall be installed around the bolt projection of the deadbolt to protect the door's edge.

R325.4.5 Double doors. The inactive leaf of a double swinging door shall be provided with flush bolts having an engagement of not less than one inch into the head and threshold of the door frame.

R325.4.6 Sliding doors. All sliding glass doors shall be equipped with a secondary locking device consisting of a metal pin, a surface mounted bolt assembly, or other equivalent device as approved by the building official. Where used, metal pins shall be installed at the intersection of the inner and outer panels of the inside door and shall not penetrate the frame's exterior surface.

R325.5 Entry vision and glazing. All main or front entry doors to dwelling units shall be arranged so that the occupant has a view of the area immediately outside the door without opening the door. The view may be provided by a door viewer having a field of view not less than 180 degrees or through windows or view ports.

R325.6 Exterior Lighting. In addition to the lighting outlet requirements of Section E3903, exterior lighting shall be provided in accordance with this section.

R325.6.1 Front and street side exterior lighting. All front and streetside door entrances shall be protected with a minimum of one lighting outlet providing a minimum of 60 watt lighting (or energy efficient equivalent).

R325.6.2 Rear exterior lighting. Dwelling units with windows or doors on the rear of the structure within eight feet (8') of grade or adjacent walking surface accessible from grade shall be equipped at the rear with a minimum of one lighting outlet of the flood light type providing a minimum of 65 watt lighting (or energy efficient equivalent) .

R325.6.3 Lighting protection. Lighting outlets required by this section shall be located a minimum of eight feet (8') above grade or adjacent walking surface accessible from grade, or shall be of a type manufactured such that the light bulb is not readily accessible.

R404.4 Retaining Walls. Retaining walls that are not laterally supported at the top and that retain in excess of 48 inches (610 mm) of unbalanced fill, that support a surcharge, or are adjacent to a public right-of-way shall be designed to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

R405.1, Exception 2. A filter membrane is not required where the gravel or crushed stone drain extends at least eighteen inches (18") above the top of the footing, or where the perforated pipe is covered with at least eighteen inches (18") of washed gravel or crushed stone.

R501.3 Fire protection of floors is deleted.

R602.6.1, Figure R602.6.1 Drilling and notching of top plate. When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall, necessitating cutting, drilling or notching of the top plate by more than 50 percent of its width, a galvanized metal tie of not less than 0.054 inch thick (1.37 mm) (16 ga) and 1 1/2 inches (38 mm) wide shall be fastened across and to the plate at each side of the opening with not less than four 10d nails at each side, or equivalent (or as required by the product listing, evaluation report, or manufacturer's

instructions, where applicable). The metal tie must extend a minimum of 6 inches past the opening. See Figure R602.6.1.

Exception: When the entire side of the wall with the notch or cut is covered by wood structural panel sheathing.

R703.6.2 Plaster, Exception. Plaster installed per an approved listing or evaluation report.

R801.3 Roof drainage. All dwellings shall have a controlled method of water disposal from roofs that will collect and discharge all roof drainage to the ground surface at least 3 feet (1524 mm) from foundation walls or to an approved drainage system.

R901.2 Restrictive covenants. It shall be unlawful for any individual or organization to establish or enforce restrictive covenants which prohibit or effectively prevent the owner of a one- or two-family dwelling or townhouse from using any types of shingles for roof covering materials allowed by this code, including wood shingle, wood shake shingle, composition, slate, tile, clay, or concrete. Nothing in this ordinance shall prohibit a homes association, if it determines to do so, from adopting restrictive covenants or otherwise governing the use of such roofing materials only to the extent of regulating the colors, styles, or dimensions of roofing materials, or other aesthetic factors. Notwithstanding any existing procedural provisions governing the time period for consideration of amendments of restrictive covenants by home associations to the contrary, a home association, if it determines to do so, may amend their restrictive covenants to provide for such aesthetic regulations for a period of 180 days from the effective date of this ordinance. Any such amendments after that 180 day period of time shall be subject to any procedural requirements set forth in such covenants.

N1101.1 through N1101.8 are deleted. See Article I of this chapter for administrative provisions.

Table N1102.1.1. Under Climate Zone 4, amend the following item:

‘Wood Frame Wall R-Value’ -- 13

(Remainder of table unamended.)

Table N1102.1.3. Under Climate Zone 4, amend the following item:

‘Wood Frame Wall U-Factor’ -- 0.082

(Remainder of table unamended.)

N1102.2.9 (Slab-on-grade floors), Exception. Insulation at the interface between the foundation wall and slab may be omitted.

Table N1102.4.1.1. Under ‘Walls’, amend first sentence to read: “Corners and headers shall be sealed and the junction of the foundation and sill plate shall be sealed.” Under ‘Fireplace, delete: “Fireplaces shall have gasketed doors.” (Remainder of table unamended.)

N1102.4.1.2 Testing. Building leakage testing shall be conducted where required by the *building official*. Where required by the *building official*, the testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party

conducting the test and provided to the *building official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*. Effective January 1, 2014, the building or dwelling unit shall have an air leakage rate of not exceeding 5 air changes per hour when tested with a blower door at a pressure of 0.2 inches w.g. (50 Pascals).

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures;
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and,
6. Supply and return registers, if installed at the time of the test, shall be fully open.

N1103.2.2 Sealing (Mandatory). Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with Section M1601.4.1 of this code.

Exceptions:

1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.
2. Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.
3. Continuously welded and locking-type longitudinal joints and seams in ducts operating at static pressures less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

Duct system tightness shall be verified by testing where required by the *building official*. Effective January 1, 2014, duct system tightness shall comply with either of the following:

1. Postconstruction test: Total leakage shall be less than or equal to 4 cfm per 100 square feet of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.

Exception: Post-construction test with leakage to outdoors less than or equal to 8 cfm per 100 square feet of conditioned floor area.

2. Rough-in test: Total leakage shall be less than or equal to 4 cfm per 100 square feet of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure. All registers shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm per 100 square feet of conditioned floor area.

Exception: The duct system leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.

N1103.2.2.1 (R403.2.2.1) Sealed air handler. Air handlers shall have a manufacturer's designation for an air leakage of no more than 2 percent of the design air flow rate when tested in accordance with ASHRAE 193.

N1103.2.3 Building cavities (Mandatory). Building framing cavities used as ducts or plenums shall be sealed to prevent leakage through the thermal envelope.

N1104.1 Lighting equipment (Mandatory). Fuel gas lighting systems shall not have continuously burning pilot lights.

Part V, Chapter 12, Mechanical Administration, is deleted.

M1602.2, Prohibited Sources (Return Air), Item #4, Exception #2. Closets with a minimum floor area of 24 square feet and minimum interior dimension 4 feet, and that are conditioned by a source of supply air.

Sections M2001, M2002, M2003, and G2452 (Boilers) are deleted.

Part VII, Chapter 25, Plumbing Administration, is deleted.

P2602.1.1. For the purpose of this section, available means located in a public way or easement abutting the subject property and within 200 feet of the proposed building.

P2706.2 Standpipes. Standpipes for automatic clothes washers shall extend a minimum of 30 inches (762 mm) and a maximum of 48 inches (1219 mm) above the finished floor. The trap for a clothes washer standpipe shall be installed at a maximum of 12 inches (305 mm) above the finished floor. Access shall be provided to all standpipe traps and drains for rodding.

P2706.2.1 Laundry tray connection. A laundry tray waste line is permitted to connect into a standpipe for the automatic clothes washer drain. The standpipes shall not be less than 30 inches (762 mm) as measured from the crown weir. The outlet of the laundry tray shall be a maximum horizontal distance of 30 inches (762 mm) from the standpipe trap.

P2901.2. References in this code to water service piping shall apply only to water service piping connected to a private source of water supply. All water service piping connected to the public water supply is under the jurisdiction of the Department of Water Services.

P2902.5.3 Lawn irrigation systems. The potable water supply to lawn irrigation systems shall be protected against backflow by a double check valve assembly or a reduced pressure principle backflow preventer. Where chemicals are introduced into the system, the potable water supply shall be protected against backflow by a reduced pressure principle backflow preventer.

P2903.8.2 Minimum size. The minimum size of individual distribution lines shall be ½" (12.7 mm). Certain fixtures such as one-piece water closets and whirlpool bathtubs shall require a larger size where specified by the manufacturer. If a water heater is fed from one end of a cold water manifold, the manifold shall be one size larger than the water heater feed.

Table P3002.2 Building Sewer Pipe. Delete "PS 25, SDR 41 (PS 28), PS 35, SDR 35 (PS 46), PS 50, PS 100" from "Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters". (Remainder of Table unamended.)

P3008.1 Sewage backflow, Exception. The backwater valve is not required unless the structure is connected to a combination storm/sanitary sewer, or the structure or the next downstream sewer manhole is located in the regulatory floodplain.

P3105.4 Floor drain. A floor drain (where used as such) need not be vented, provided it is within 25 feet of a three-inch stack or horizontal drain which has at least a three-inch-diameter vent extension through the roof.

P3114.3 Where permitted. Vents may terminate to an air admittance valve under the following conditions:

- (1) For sinks located where there is no wall accessible from the sink location (eg island sinks); or where access to the vent system would require notching or boring of studs in excess of the limitations of section R602.6.
- (2) In existing construction, where the existing vent system is not accessible to the fixture location without the removal of finish materials or other existing construction.

E3902.2 (Garage and accessory building receptacles), Exception. Receptacles utilizing the provisions of this exception shall be permanently marked to indicate "[Type of equipment] Only – No GFCI Protection".

1. A dedicated receptacle supplying only a garage door opener.
2. A dedicated receptacle supplying only a refrigerator and/or freezer.

E3902.5 (Unfinished basement receptacles), Exception. Receptacles utilizing the provisions of this exception shall be permanently marked to indicate "[Type of equipment] Only – No GFCI Protection".

1. A dedicated receptacle supplying only a permanently installed fire alarm or burglar alarm system.
2. A dedicated receptacle supplying only a sump pump.
3. A dedicated receptacle supplying a refrigerator and/or freezer.

E3902.12 Arc-fault circuit-interrupter protection. All branch circuits that supply 120-volt, single-phase, 15- and 20-ampere outlets installed in bedrooms shall be protected by a combination type arc-fault circuit interrupter installed to provide protection of the entire branch circuit.

Exceptions 1, 2 & 3 remain unamended.

E4002.14 Tamper-resistant receptacles is deleted.

Part X, Appendices: The following appendix chapters are hereby adopted:

Appendix G, Swimming Pool Enclosures.

Section AG101. Swimming pools shall be completely enclosed by a barrier at least 4 feet (1290 mm) in height. Openings in the barrier shall not permit the passage of a 4-inch (102 mm) diameter sphere. Gates in the barrier shall be self-closing and self-latching; and shall be maintained locked when the pool is not tended by a responsible person.

Sections AG103 through AG107 are deleted.

Appendix I, Private Sewage Disposal. [See Article VIII of this chapter.]

(Ord. No. 010783, 8-23-01; Ord. No. 020901, 8-29-02; Ord. No. 040477, § 1, 8-12-04; Ord. No. 040580, § 5, 12-16-04; Ord. No. 071193, § 1, 1-3-08; Ord 100346, 7-1-2010; Ord. No. 120375, § 1, 5-24-12)

Secs. 18-58—18-73. Reserved.